

## Welcome to the American Museum of Natural History!

Today you will learn about *Tyrannosaurus rex* (*T. rex*) and the group of animals it belongs to, called tyrannosaurs. These animals all went extinct long before humans were around. But by studying the fossils they left behind, we know more about them now than ever before!

**Note to Educator:** Some of the prompts on this worksheet require students to talk to a partner. Location names refer to the map in the Educator's Guide.

- 1. Look** at the model of the one-year-old *T. rex*. **Talk** to a partner about what you notice about this young animal and the shadow of the adult it could become. Does anything surprise you? **Take notes** about what you both observed.

**Answers will vary but may include:**

- It is very small, covered in feathers, and has big eyes.
- The adult looks much bigger!

- 2. Choose** one of the early relatives of *T. rex*.

**Sketch and label**

some of its interesting features, both from the model and from its accompanying skull fossil.

**Early tyrannosaur models are found at location 2b.**

**Choices include:**

- *Protoceratosaurus bradleyi*
- *Dilong paradoxus*
- *Xionglong baimuensis*

What does the fossil tell us about this tyrannosaur?

**Answers will vary.**

**Talk** to a partner about what you each sketched. Have a conversation about similarities and differences you notice between the different animals.

Continue the conversation with your partner at the *T. rex* traits wall. How are these animals similar to and different from *T. rex*? **Location 2c.**

**3.** Look at the model of the four-year-old *T. rex* and read the panels in front of it. Talk to a partner about what you notice about this *T. rex* and how it compares to the hatchling at the beginning of the exhibition. Take notes about what you both observed:

**Answers will vary but may include:**

- When *T. rex* is younger, it is lighter and has long legs so it could run fast to escape predators; when it is older it doesn't need to run as fast.
  - Younger *T. rex* has sharp teeth to slice meat, but they aren't strong enough to crush bones like an adult's.
  - *T. rex* has lots of feathers, probably for warmth and camouflage, when it is young; when it is older it has fewer feathers.
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**4.** Look at the model of the adult *T. rex* and read the panels around it. Talk to a partner about what you notice about this *T. rex*, and how it compares to the hatchling and the four-year-old *T. rex*. Take notes about what you both observed:

**Answers will vary but may include:**

- Adult *T. rex* is much bigger than the others.
  - It has giant teeth and jaws, and its arms are too tiny to do anything.
  - It uses its giant teeth and jaws for catching and crushing the bones of its prey.
  - It has big eyes that face forward for excellent vision and depth perception.
  - It may have had a very sensitive face and an excellent sense of smell.
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**5. Choose** two fossils from anywhere in the exhibition. **Sketch** and **label** them.

FOSSIL NAME 1: \_\_\_\_\_

**Locations and names of all fossils in the exhibition:**

- 1b. *T. rex* vertebra
- 2a. *Protoceratosaurus bradleyi* skull
- 2b. *Dilong paradoxus* skull
- 2f. *Xiongguanlong baiorensis* skull
- 3a. *T. rex* toe bone
- 3a. *T. rex* thigh bone
- 3d. Adult *Tarbosaurus* skeleton
- 3d. Adult *Tarbosaurus* skull
- 3f. Growth rings in fossil bones
- 3f. *Nanotyrannus* skull
- 4a. *T. rex* skeleton
- 4b. Tyrannosaur claw
- 4b. *T. rex* tooth
- 4b. *Alioramus altai* jaw
- 4b. *T. rex* partial jaw
- 4e. *Tarbosaurus bataar* tooth
- 4e. *Alioramus altai* skull
- 4f. Coprolite
- 4f. Bite marks in vertebra fossil
- 5b. *T. rex* skull (adolescent)
- 5c. *Daspletosaurus torosus* skull
- 5c. *Guanlong wucai'i* skull
- 5c. *T. rex* partial skull
- 5e. *T. rex* skin impressions

What does this fossil tell us about the tyrannosaur it came from?

**Answers will vary.**

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FOSSIL NAME 2: \_\_\_\_\_

What does this fossil tell us about the tyrannosaur it came from?

**Answers will vary.**

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**6. Visit** the survival challenge stations with a partner. Take turns trying them out. **Talk** about the decisions you made and what happened.

**Note to Educator:**

These stations can be found at locations 2d, 3b, 4d, and 5c.

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**Take notes** about what you both observed.

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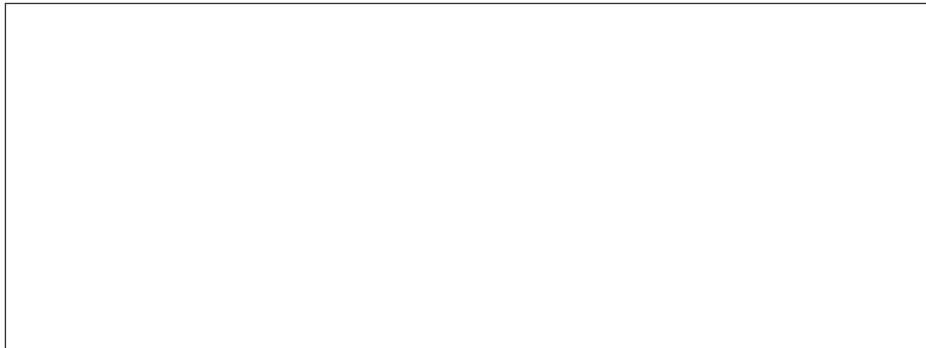
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- 2.** **Choose** one of the early relatives of *T. rex*.

**Sketch and label**

some of its interesting features, both from the model and from its accompanying skull fossil.



What does the fossil tell us about this tyrannosaur?

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**Talk** to a partner about what you each sketched. Have a conversation about similarities and differences you notice between the different animals.

Continue the conversation with your partner at the *T. rex* traits wall. How are these animals similar to and different from *T. rex*?

- 3. Look** at the model of the four-year-old *T. rex* and read the panels in front of it. **Talk** to a partner about what you notice about this *T. rex* and how it compares to the hatchling at the beginning of the exhibition. **Take notes** about what you both observed:

- 4. Look** at the model of the adult *T. rex* and read the panels around it. **Talk** to a partner about what you notice about this *T. rex*, and how it compares to the hatchling and the four-year-old *T. rex*. **Take notes** about what you both observed:

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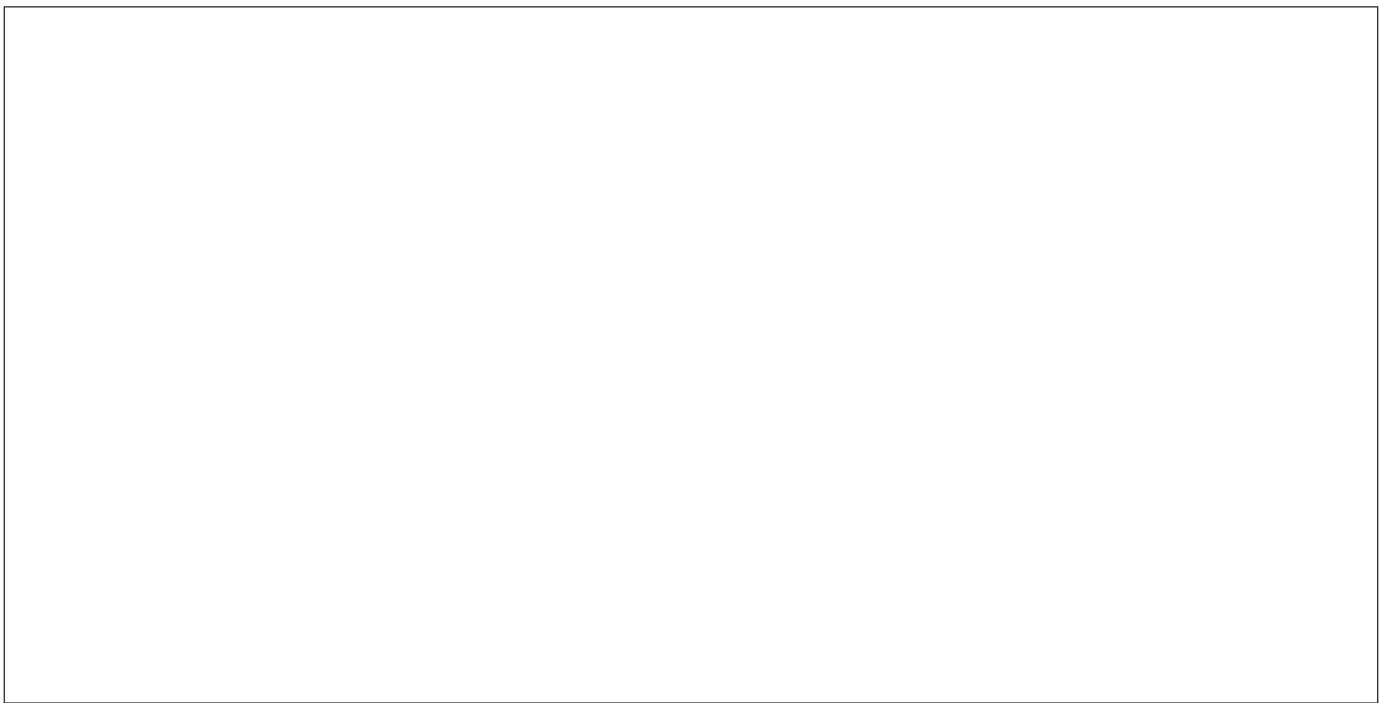
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**5. Choose** two fossils from anywhere in the exhibition. **Sketch** and **label** them.

FOSSIL NAME 1: \_\_\_\_\_



What does this fossil tell us about the tyrannosaur it came from?

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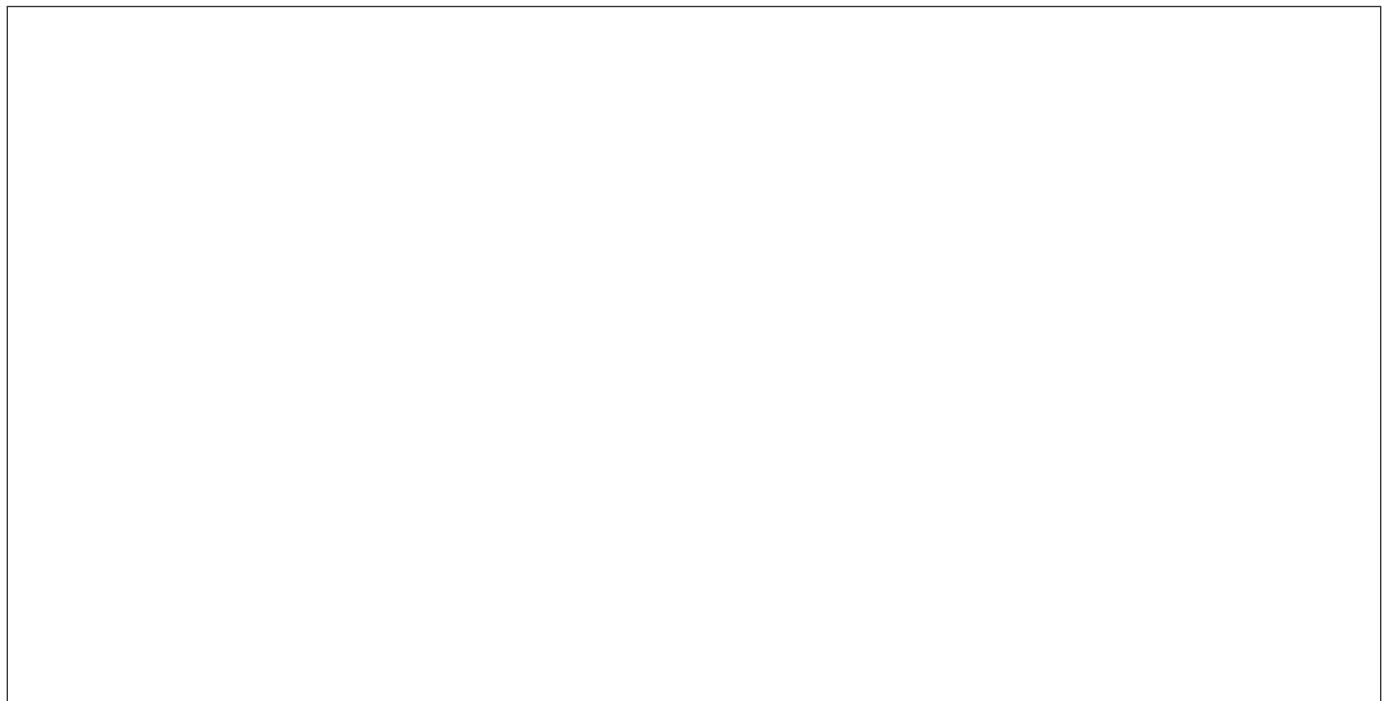
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FOSSIL NAME 2: \_\_\_\_\_



What does this fossil tell us about the tyrannosaur it came from?

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**6.** Visit the survival challenge stations with a partner. Take turns trying them out. Talk about the decisions you made and what happened.